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1. A voltage-controlled oscillator circuitry, comprising:

a variable capacitor circuitry, the variable capacitor circuitry configured to adjust the frequency of an output signal of the voltage-controlled oscillator circuitry in response to a plurality of control signals; and

a control circuitry, the control circuitry configured to generate the plurality of control signals in response to an input control signal,

wherein the voltage level of each of the plurality of the control signals differs by an offset voltage from the voltage level of the remaining signals in the plurality of signals.

CLAIM 2 IS CANCELLED

--3. (New) The voltage-controlled oscillator circuitry according to claim 1, wherein the variable capacitor circuitry comprises a plurality of capacitor stages coupled in parallel.--

--4. (New) The voltage-controlled oscillator circuitry according to claim 3, wherein each of the plurality of capacitor stages comprises a first capacitor coupled to a second capacitor.--

--5. (New) The voltage-controlled oscillator circuitry according to claim 4, wherein the first and second capacitor in each of the plurality of capacitor stages each comprise a fixed capacitor.--

--6. (New) The voltage-controlled oscillator circuitry according to claim 5, comprising a plurality of variable impedance devices, wherein each of the plurality of variable impedance devices couples in parallel with the second capacitor in a respective one of the plurality of capacitor stages.--

--7. (New) The voltage-controlled oscillator circuitry according to claim 6, wherein each of the plurality of control signals controls a respective variable impedance device in the plurality of variable impedance devices.--

--8. (New) The voltage-controlled oscillator circuitry according to claim 7, wherein the input control signal comprises a voltage signal.--

--9. (New) The voltage-controlled oscillator circuitry according to claim 7, wherein the input control signal comprises a current signal.--

--10. (New) A radio-frequency (RF) transmitter circuit, comprising:

a controlled oscillator circuit adapted to provide an output signal with variable frequency in response to a plurality of control signals; and

a signal generator circuit adapted to generate the plurality of control signals having respective levels that are progressively offset from an input control signal,

wherein a radio-frequency output signal of the transmitter circuit is derived from the output signal of the controlled oscillator circuit.--

--11. (New) The radio-frequency (RF) transmitter circuit according to claim 10, wherein the signal generator circuit comprises a plurality of voltage sources, each of the plurality of voltage sources configured to generate a respective one of the plurality of control signals.--

--12. (New) The radio-frequency (RF) transmitter circuit according to claim 11, wherein the plurality of voltage sources are coupled in series.--

--13. (New) The radio-frequency (RF) transmitter circuit according to claim 12, wherein the input control signal comprises a voltage signal--

--14. (New) The radio-frequency (RF) transmitter circuit according to claim 10, wherein the signal generator circuit generates the plurality of control signals by supplying a current signal to a first terminal of a plurality of resistors coupled in series.--

--15. (New) The radio-frequency (RF) transmitter circuit according to claim 14, wherein the input control signal couples to a second terminal of the plurality of resistors.--

--16. (New) The radio-frequency (RF) transmitter circuit according to claim 15, wherein each of the plurality of resistors generates a respective one of the plurality of control signals.--

--17. (New) The radio-frequency (RF) transmitter circuit according to claim 10, wherein the signal generator circuit further comprises a plurality of voltage generator circuits, each of the plurality of voltage generator circuits comprising a current source coupled to a first terminal of a resistor.--

--18. (New) The radio-frequency (RF) transmitter circuit according to claim 17, wherein the input control signal couples to a second terminal of each resistor in each of the plurality of voltage generator circuits.--

--19. (New) The radio-frequency (RF) transmitter circuit according to claim 18, wherein the first terminal of each resistor in the plurality of resistors supplies a respective signal in the plurality of control signals.--

--20. (New) The radio-frequency (RF) transmitter circuit according to claim 10, wherein the input control signal comprises a current signal.--

--21. (New) The radio-frequency (RF) transmitter circuit according to claim 20, wherein the plurality of control signals comprise voltage signals, each of the control signals supplied by a respective one of a plurality of voltage generator circuits.--

--22. (New) An integrated circuit, comprising:

a controlled oscillator circuit, including:

a continuously variable capacitor, the continuously variable capacitor having a capacitance value that varies in response to a plurality of control signals; and

a signal generator circuit adapted to generate the plurality of control signals based on a reference control signal, the signal generator circuit further adapted to generate the plurality of control signals such that each control signal in the plurality of control signals differs from the reference control signal by a respective one of a plurality of offset values,

wherein the integrated circuit has a radio-frequency output signal derived from an output signal of the controlled oscillator circuit.--

--23. (New) The integrated circuit according to claim 22, wherein the continuously variable capacitor comprises a plurality of variable capacitors coupled in parallel.--

--24. (New) The integrated circuit according to claim 23, wherein each of the plurality of variable capacitors comprises a capacitor coupled to a variable impedance device.--

--25. (New) The integrated circuit according to claim 24, wherein each of the plurality of control signals couples to a respective one of the plurality of variable impedance devices.--

--26. (New) The integrated circuit according to claim 25, wherein the signal generator circuit comprises at least one current source coupled to at least one resistor.--

--27. (New) The integrated circuit according to claim 26, wherein the input control signal is a voltage signal.--

--28. (New) The integrated circuit according to claim 27, wherein the radio-frequency output signal has a frequency that varies in response to the plurality of control signals.--

--29. (New) The integrated circuit according to claim 28, further comprising a radio-frequency transmitter circuit coupled to the output signal of the controlled oscillator circuitry.--

--30. (New) The integrated circuit according to claim 29, further comprising a radio-frequency receive circuitry.--

--31. (New) The integrated circuit according to claim 30, wherein the radio-frequency receive circuitry generates at least one output signal coupled to a first integrated circuit that includes digital signal processing circuitry.--

--32. (New) The integrated circuit according to claim 31, wherein the controlled oscillator circuit couples to an offset phase-locked loop circuit.--

--33. (New) The integrated circuit according to claim 32, wherein the radio-frequency receive circuitry comprises a low intermediate-frequency receive circuitry.--

--34. (New) A method of generating radio-frequency (RF) signals, comprising:

generating a plurality of control signals having respective levels that are progressively offset from an input control signal;

supplying the plurality of control signals to an oscillator circuit; and

varying a frequency of output signal of the oscillator circuit in response to the plurality of control signals.--

--35. (New) The method according to claim 34, wherein generating a plurality of control signals further comprises using a plurality of voltage sources, wherein each of the plurality of voltage sources generates a respective one of the plurality of control signals.--

--36. (New) The method according to claim 35, wherein the plurality of voltage sources are coupled in series.--

--37. (New) The method according to claim 36, wherein generating a plurality of control signals further includes using a voltage signal as the input control signal.--

--38. (New) The method according to claim 34, wherein generating a plurality of control signals further comprises generating the plurality of control signals by supplying a current signal to a first terminal of a plurality of resistors coupled in series.--

--39. (New) The method according to claim 38, wherein generating a plurality of control signals further comprises supplying the input control signal to a second terminal of the plurality of resistors.--

--40. (New) The method according to claim 39, wherein generating a plurality of control signals further comprises using each of the plurality of resistors to provide a respective one of the plurality of control signals.--

--41. (New) The method according to claim 34, wherein generating a plurality of control signals further comprises using a plurality of voltage generator circuits, each of

the plurality of voltage generator circuits comprising a current source coupled to a first terminal of a resistor.--

--42. (New) The method according to claim 41, wherein generating a plurality of control signals further comprises supplying the input control signal to a second terminal of each resistor in each of the plurality of voltage generator circuits.--

--43. (New) The method according to claim 42, wherein generating a plurality of control signals further comprises supplying each of the signals in the plurality of control signals from the first terminal of a respective resistor in the plurality of resistors.--

--44. (New) The method according to claim 34, wherein generating a plurality of control signals further includes using a current signal as the input control signal.--

--45. (New) The method according to claim 44, wherein generating a plurality of control signals further comprises generating each of the plurality of control signals by using a respective one of the plurality of voltage generator cells.--